SANTA CRUZ BIOTECHNOLOGY, INC.

Importin-8 siRNA (m): sc-75337

BACKGROUND

The Importin complex consists of Importin-α and Importin-β proteins which assist in the transport of arginine- or serine-rich (SR) peptides across the nucleus. Importin-8, also known as IPO8 or RanBP8, is a 1,037 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one Importin N-terminal domain. One of several members of the Importin-β family, Importin-8 functions as a target for Ran (a GTPase) and is thought to play a role in nuclear protein import, acting as either an adaptor-like protein or as an autonomous nuclear transport receptor. When acting as an adaptor-like protein, Importin-8 binds to Ran at the nucleoplasmic side of the nuclear pore complex (NPC) and initiates the dissociation of the Importin complex, an event that releases the target substrate into the nucleus. Importin-8 may exist alone or as a heterodimer with karyopherin β1, another member of the Importin-β family.

REFERENCES

1. Nakielny, S., et al. 1996. Transportin: nuclear transport receptor of a novel nuclear protein import pathway. Exp. Cell Res. 229: 261-266.
2. Görlich, D., et al. 1997. A novel class of RanGTP binding proteins. J. Cell Biol. 138: 65-80.
3. Jäkel, S., et al. 1998. Importin β, transportin, RanBP5 and RanBP7 mediate nuclear import of ribosomal proteins in mammalian cells. EMBO J. 17: 4491-4502.
4. Dean, K.A., et al. 2001. Signal recognition particle protein 19 is imported into the nucleus by importin 8 (RanBP8) and transportin. J. Cell Sci. 114: 3479-3485.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605600. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Maity, T.S., et al. 2006. Compartmentalization directs assembly of the signal recognition particle. Biochemistry 45: 14955-14964.
7. Johansson, S., et al. 2007. Validation of endogenous controls for quantitative gene expression analysis: application on brain cortices of human chronic alcoholics. Brain Res. 1132: 20-28.

CHROMOSOMAL LOCATION

Genetic locus: Ipo8 (mouse) mapping to 6 G3.

PRODUCT

Importin-8 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Importin-8 shRNA Plasmid (m): sc-75337-SH and Importin-8 shRNA (m) Lentiviral Particles: sc-75337-V as alternate gene silencing products.

For independent verification of Importin-8 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75337A, sc-75337B and sc-75337C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Importin-8 siRNA (m) is recommended for the inhibition of Importin-8 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Importin-8 (C-5): sc-398854 is recommended as a control antibody for monitoring of Importin-8 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Importin-8 gene expression knockdown using RT-PCR Primer: Importin-8 (m)-PR: sc-75337-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.